

SPONDYLOTHERAPY

(this discussion on spondylotherapy is taken from Principles and Practice of Chiropractic: "Fundamentals of Chiropractic Physiological Therapeutics" (chap. 7) by Joseph Janse)

The spinal cord, functionally, is a colony of superimposed reflex centers from which the vegetative functions of most visceral and glandular tissues and organs are primarily or secondarily controlled. Many of the common organic neuroses such as sluggish gall bladder, spastic pylorus, hyperactive stomach, functional tachycardia, and others are primarily caused by a disturbance (sluggishness) of the reflex outflow from these special centers. Spondylotherapy, therefore, may be defined as "that method of treating visceral disease through the stimulation of the involved sluggish reflexes by the application of a mechanical or electrical force in properly judged fashion on the vertebra overlying the reflex center."

A. NEUROLOGICAL BASIS

The central nervous system is an aggregate of many centers of reflex and interpretive activity of which the epicritical center of the brain is the most exacting and influential. The central nervous system may be considered a segmented unit; each unit constitutes a center of sensory interpretation and motor initiation. The spinal cord consists of 31 segments or neuromeres, each one of which serves as a little "reflex brain" from which point many of the vegetative (involuntary visceral) and even somatic activities are initiated. By means of some form of mechanical stimulation to one of these cord neuromeres, certain reflexes of visceral activity could be initiated to the extent of serving as a measure to overcome malfunction of that neuromere. (It is no secret that the chiropractor frequently gives his adjustment for the specific reason of reflex initiation -- the inhibition or stimulation of visceral activity.)

The autonomic nervous system, from which all visceral structures receive their innervation, consists of two components,

the sympathetics and the parasympathetics, both having their respective points of origin from the central nervous system. The motor fibers of the sympathetic portion find origin in the lateral gray columns of the spinal cord from the first dorsal segment to the fourth lumbar segment inclusive, while the parasympathetic motor fibers have a cranial sacral origin. The entire sympathetic component can be influenced by means of spinal stimulations because of its spinal origins. But what of the parasympathetics which, to the greatest extent, find origin not in the cord but somewhere within the brain stem? How can one regulate one half of two antagonistic components of a part of the nervous system so vitally tied up with the visceral activities?

The nuclei of all the major cranial nerves, have their spinal extensions and connections, and therefore can be influenced by cervical and upper dorsal stimulations. Along with the sensory and motor fasciculi (ascending and descending tracts) making up the white substance of the cord, there is also an autonomic fasciculus which has mediations with cell bodies within the lateral gray columns of the cord and the parasympathetic cell bodies within the motor nuclei of the aforementioned cranial nerves. Thus, there is a spinal cord communication between the parasympathetic and sympathetic nervous system, and it is not improbable that both the sympathetic and parasympathetic components may be very intimately influenced by means of some form of mechanical or electrical stimulations along the spine.

B. GENERAL RULES OF SPONDYLOTHERAPY

Electrically, the stimulus may be in the form of an interrupted rapid sine. Mechanically, the principle of interrupted percussion or vibration is usually employed. Dr. Janse maintains that the most gratifying results may be attained by a specific adjustment of the vertebra first followed by two to four minutes of interrupted percussion to prolong the effect of stimulation produced by the adjustment of the vertebra first, and then effect maximum benefit in normalizing the reflex activity.

A set of basis facts related to spondylotherapy and reflex activity follows:

1. initially all contact with the patient's body is stimulative in effect. The stimulation may last from one half to several minutes, depending on the type of application.
2. Light, continuous contact held beyond the initial stimulation time will produce profound relaxation through sedation.
3. Heavy, continuous contact will eventually produce inhibition because of actual nerve blockage.
4. Continuous percussion, concussion, or vibration will eventually inhibit due to fatiguing of the involved reflexes.
5. Interrupted, moderate percussion, concussion or vibration or sinusoidalization will prolong the initial stimulation of the reflexes involved.
6. It is to be remembered that there are reflexes which either augment or inhibit the activity of the organ innervated. In this sense, the stimulation of one reflex may inhibit an organ while the stimulation of another accelerates the activity of that organ.

C. PHYSIOLOGICAL EFFECTS

1. As a genral rule for specific work, percussion is more effective than concussion. In either case, for the purpose of stimulation the blows should be rapid and interrupted, e.g., percussion of 10-15 strokes followed by an interval of rest for 15 seconds, which is followed by 10-15 strokes again and so on, the entire treatment lasting three to ten minutes.
2. Persistent rapid percussion or concussion will produce inhibition and temporary paralysis fo the center which is treated.
3. If two or more different centers are to be percussed or concussed, we may then easily secure the necessary interruptions by concussing first one segment and then the other segment,

and by this alteration secure the proper interruptions.

4. Pressure applied for a brief space of time, consisting of about one half minute, acts as a decided stimulus, whereas long continued pressure acts as a depressant and inhibits the activity of the reflex center under consideration.

5. As a general rule, for the purpose of initiating the visceral reflexes, if sinusoidal is to be used. the rapid continuous sine is the most effective. the reason for this is that the visceral reflexes are quite phlegmatic in response unless pronounced stimulation is employed. (Slow sinusoidal interruptions are efficient in stimulating, exercising, and strengthening muscular tissue.)

6. When using percussion, application may be made directly over the spinous process, although the best points of application are over the areas marking the junction of the transverse processes with the body of the vertebrae.

7. Where two or more vertebral areas are designated as the points of reflex initiation, commence with the upper one and proceed downward.

D. SPINAL CENTER RESPONSES TO SPONDYLOTHERAPY

The following list of spinal centers and their physiological effects is considered to be approximate due to the fact that specific effects may vary with the neurological development of each person, overlapping effects of one center to another, and specificity of application.

1. 1st and 2nd Cervical vertebrae

a. pronounced reflex influence created at this point is that of stimulating the vagus nerve, especially with reference to its influence upon the stomach.

b. by means of stimulations at this point the peristaltic and secretory activities of the stomach are decidedly increased.

c. also by influence on the vagus nerves, the secretory activities of the nasal, buccal, and pulmonary

mucosa are stimulated.

2. 3rd Cervical vertebra

a. stimulation of this area augments the activities of the phrenic nerves.

b. because of this influence, this is the area where the diaphragmatic excursions are increased in depth, and also a good area of reflex treatment for paralysis of the diaphragm following wasting diseases.

c. inhibition at this point is very beneficial in controlling hiccoughs, whooping cough, etc.

3. 4th and 5th Cervical vertebrae

a. stimulation at this point initiates the lung reflex of contraction which is to be used in that type of asthma where the dyspnea occurs during expiration. Also beneficial in emphysema, etc.

b. this area also marks the point at which the reflex of vasoconstriction of the blood vessels of the lung may be initiated to be used to check pulmonary hemorrhage.

4. 6th and 7th Cervical vertebrae

a. this area constitutes the important reflex center for peripheral vasoconstriction and cardio-motor action.

b. stimulation at this point produces a very decided general vasoconstriction, and is employed in treating cases of low blood pressure due to peripheral atonicity.

5. 1st, 2nd, and 3rd Thoracic vertebrae

a. stimulation at this point initiates the lung reflex of dilation, and is used in treatment of the inspiratory form of bronchial asthma.

b. stimulation at this point will also inhibit cardiac action and constitutes the area of treatment in cases of tachycardia.

c. stimulation over these segments initiates the gastric reflex of dilatation, along with relaxation of the

cardiac end and contraction of the pyloric end of the stomach. It is the area of choice in treating cases of gastric hypermobility.

6. 4th Thoracic vertebra

- a. stimulation at this point initiates the reflex of aortic and cardiac dilatation.
- b. this also constitutes the area through which stimulation may induce the visceral reflex of relaxation for the treatment of acute viscerospasms in nervous individuals.

7. 5th Thoracic vertebra

- a. localized stimulation on the right side will induce the reflex of pyloric dilatation and should be used in relieving acute pyloric and duodenal spasms.
- b. persistent treatment at this area will also aid in repositioning a ptosed stomach.

8. 6th Thoracic vertebra

- a. stimulation to the right side initiates the gall bladder reflex of contraction.

9. 7th Thoracic vertebra

- a. bilateral stimulation over this area initiates the viscero-motor reflex of dilatation of the kidneys. Alternate stimulations over this area and the 10th thoracic vertebra will produce alternate contractions and dilatations of the kidneys, thus stimulating their activities.
- b. stimulation at this point also augments the functioning of the liver.

10. 8th and 9th Thoracic vertebrae

- a. stimulation to the right of the 8th and 9th will cause dilatation of the gall duct and bladder.

11. 10th and 11th Thoracic vertebrae

- a. bilateral stimulation of the 10th dorsal area alone enhances the function of internal secretion of the pancreas.
- b. bilateral stimulation of the 11th augments the activities of the suprarenal glands.

Spondylotherapy

c. stimulation to the left of the 10th initiates the reflex of splenic contraction, increasing the number of RBCs in the blood stream.

d. stimulation over both vertebrae will cause dilatation of the kidneys, intestines, and colon. This is the area treated in cases of spastic colitis and constipation.

12. 12th Thoracic vertebra

a. one of the most noticeable of the phenomena excited by stimulation of the 12th is the contraction of the prostate.

b. stimulation at this point also increases the tone of the cecum.

c. also affects and increases the tonicity of the sphincters of the bladder and will assist in overcoming cases of urinary incontinence.

13. 1st, 2nd, and 3rd Lumbar vertebra

a. stimulation over these vertebrae will excite uterine contraction, as well as contraction of the round ligaments, and is used in cases of chronic subinvolution and retrodisplacements due to relaxation of the round ligaments. Also used to overcome uterine hemorrhage.

b. specific stimulations over the 2nd lumbar excites the bladder reflex of contraction and relaxes the vesicular sphincters.

14. 4th and 5th lumbar vertebrae and Sacrum

a. stimulation over these areas augments the tonicity of the lower bowel, initiating the reflex of sigmoidal and rectal contraction.

b. constitutes the area of treatment in atonicity of the lower bowel.

E. REGIONAL RESPONSES TO SPONDYLOTHERAPY

The following partial list of regional responses to spondylotherapy is approximate and will vary under different circumstances, as previously mentioned .

1. Adrenal Glands

a. stimulation over the 10th to 12th thoracic verte-

brae causes dilation of the blood vessels of these glands.

b. interrupted percussions over the 8th and 9th thoracics seem to stimulate secretory activity of these glands.

2. Aorta

a. applications over the 7th cervical causes constriction of this large vessel and its main trunks.

b. applications to the 11th and 12th thoracics produce dilation.

3. Blood Vessels in General

a. stimulation over the 7th cervical builds up vaso-motor tone through the great spinal vaso-dilation of all splanchnic blood vessels.

4. The centers controlling Blood Pressure

a. high blood pressure is usually most effectively reduced by protracted mild stimulation over the 3rd and 4th thoracics.

b. in case of high blood pressure associated with cardiac strain, alternate applications over the 7th cervical and 4th dorsal should be made.

c. low blood pressure is most effectively controlled by stimulations over the 6th and 7th cervicals and lower lumbar and sacrum (these are the myotonic and vasoconstrictor centers of the spinal cord).

5. Urinary Bladder

a. application over the 1st to 3rd lumbar excites contraction of the bladder body but relaxes its sphincters.

b. percussions over the 10th to 12th thoracics will cause dilation of this organ, as well as the associated ureters and renal pelvises.

6. Colon

a. stimulation over the 10th, 11th, and 12th thoracics causes dilation and relaxation of this organ.

b. applications over the 3rd, 4th, and 5th lumbar cause contraction of colon musculature, other than that of the sphincters which relaxes.

Spondylotherapy

7. Diaphragm

a. diaphragmatic tone and depth of excursion is greatly augmented by interrupted percussion over the 3rd and 4th cervicals, followed by interrupted stroking along the costal margins.

b. to be employed in diaphragmatic paralysis following acute respiratory ailments, asthma, respiratory form of infantile paralysis, and in all cases of ptosis of the thoracic cage.

8. Eyes

a. applications over the 1st and 2nd cervical segments cause stimulation of the upper cervical ganglion from which the sympathetics to the eye exit.

b. the 7th cervical, because of its vasomotor influence, should also be stimulated.

c. the 2nd and 3rd thoracics should also be stimulated because they overlies the sympathetic centers from which the dilator pupillae and exophthalmic muscles receive their innervation.

9. Gall Bladder

a. stimulation over the 5th and 6th dorsals will excite contraction of the body of the gall bladder, but causes dilation of the biliary passages and associated valves.

b. percussion over the 9th and 10th dorsals relaxes the body of the gall bladder, but tightens and tones up the sphincters of the biliary passages.

10. Heart

a. applications over the 7th cervical stimulate the great myotonic centers of the heart and thus strengthen and normalize the heart beat in all forms of valvular and myocardial lesions.

b. the upper cervicals in cases of functional tachycardia should be stimulated because of their influence on the vagus nerves.

Spondylomyelography

c. stimulation over the 2nd and 3rd thoracics increases the cardiac rate.

d. never adjust the atlas and the 2nd and 3rd thoracics for the heart at the same time, because of sympathetic and parasympathetic incompatibility

11. Kidneys

a. stimulation of the 7th, 8th, and 9th thoracics excites contraction of the renal musculature (sphincter calices).

b. applications over the 10th, 11th, and 12th thoracics will cause relaxation of the renal musculature. Very important in extending accumulated debris in congestive and toxic states of these organs.

12. Liver

a. stimulation of the 7th cervical, 2nd, 3rd, and 4th lumbers for the purpose of vasoconstriction.

b. stimulation of the 10th thoracic for the purpose of vasodilation.

c. applications over the 6th, 7th, and 8th thoracics increases the functional capacity of this organ.

13. Lungs

a. stimulation of the 3rd, 4th, and 5th cervicals causes contraction of the musculature of the lungs, e.g., the alveolar walls.

b. applications over the 3rd, 4th, and 5th thoracics cause relaxation of the circular muscle layer of the bronchial ramifications (asthmatic centers).

14. Ovaries

a. stimulation over the upper three lumbers excites the contraction of the peripheral muscular stroma of the ovaries.

15. Pancreas

a. stimulation over the 10th thoracic specifically increases the blood capacity of this gland.

b. stimulation of the atlas, because of the influence on the vagus nerves, which are secretory to the pancreas.

Spradlyllotherapy

16. Prostate

a. stimulation of the 12th thoracic produces marked contraction of the musculature of this gland and organ.

17. Rectum

a. rapid stimulation over the 5th lumbar and sacrum increases the tone of the rectal musculature and blood vessels

18. Spinal cord

a. vigorous stimulation over the 10th and 11th thoracics causes noticable increase in the circulation to the spinal cord.

19. Spleen

a. alternate stimulation over the 2nd lumbar and the 10th and 11th thoracics excites splenic activity.

20. Stomach and Pylorus

a. stimulations over the 5th, 6th, and 7th thoracics induces normalization of the synchrony between contraction of the body of the stomach and relaxation of the pylorus.

21. Thyroid Gland

a. the 7th cervical excites the secretory and vaso-motor fibers leading to the thyroid.

22. Uterus

a. applications over the 10th and 11th thoracics dilates the body of the uterus.

23. External Genitalia

a. sacral and lower lumbar stimulation excites the nervi erigentes and augments sexual capacity.